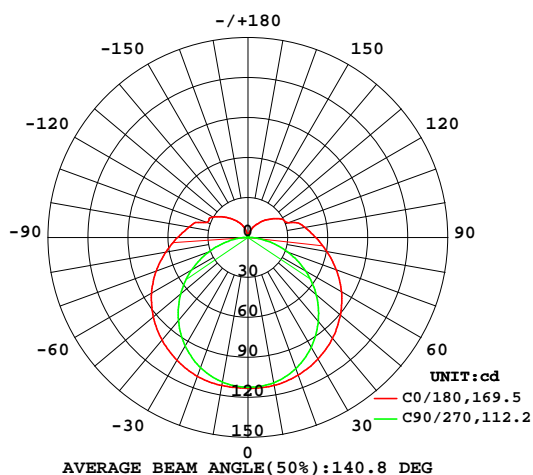


## LUMINAIRE PHOTOMETRIC TEST REPORT

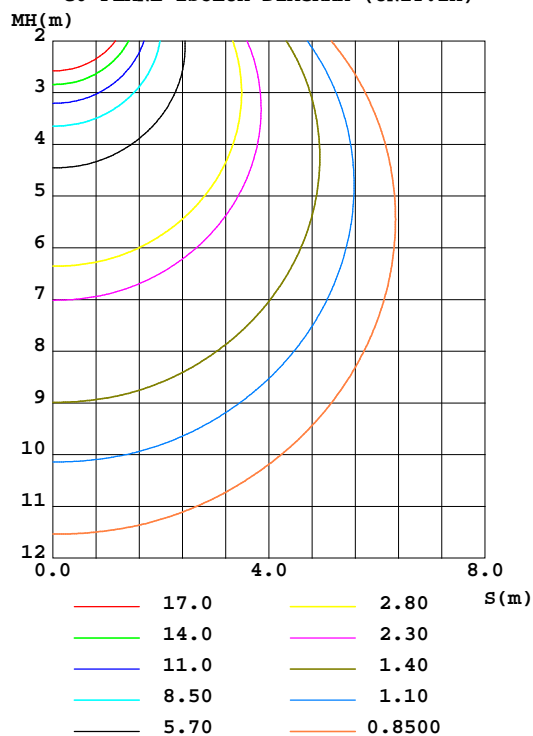
Test:U:24.00V I:0.4280A P:10.27W PF:1.000 Freq:0Hz Lamp Flux:513.293x1 lm		
NAME: NNS1224	TYPE:	WEIGHT:
SPEC.:NNS1224-8SW24CSS050CC0100	DIM.: 1000*12*24mm	SERIAL No.:
MFR.: Colors	SUR.:1000*12	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 49.98 lm/W			
MODEL	NNS1224	I <sub>max</sub> (cd)	113.2	S/MH(C0/180)	1.41
NOMINAL POWER(W)	9.6	LOR(%)	100.0	S/MH(C90/270)	1.25
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	513.30	h UP,DN(C0-180)	8.8,40.7
NOMINAL FLUX(lm)	513.293	CIE CLASS	SEMI-D.	h UP,DN(C180-360)	9.3,41.2
LAMPS INSIDE	1	h up(%)	18.1	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	24	h down(%)	81.9	CIBSE SHR MAX	1.50

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
 C Interval: 90.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:COLORS  
 Test Date:2019-07-01

g Range: 0 - 180DEG  
 Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
 Humidity:65.0%  
 Test Distance:10.750m [K=1.0000]  
 Remarks:

## ZONAL FLUX DIAGRAM

### ZONAL FLUX DIAGRAM:

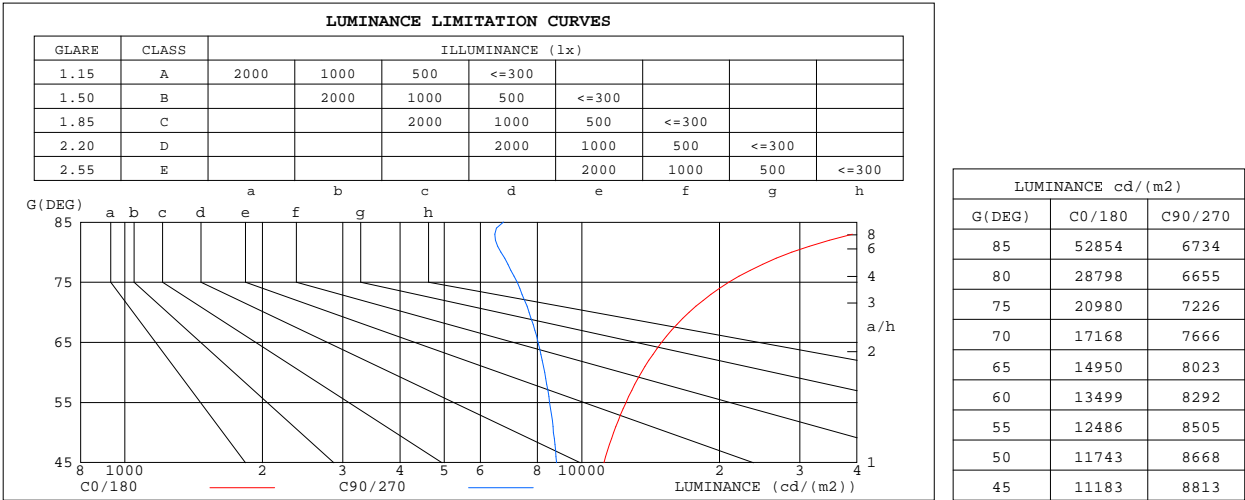
g	C0	C90	C180	C270					g	F zone	F total	%lum,lamp
10	112.8	110.7	112.8	110.2					0~ 10	10.71	10.71	2.09,2.09
20	109.9	104.8	110.9	104.0					10~ 20	31.06	41.77	8.14,8.14
30	105.3	95.11	106.4	94.11					20~ 30	48.05	89.82	17.5,17.5
40	98.77	82.16	100.4	81.22					30~ 40	59.94	149.8	29.2,29.2
50	90.58	66.86	92.75	65.93					40~ 50	65.70	215.5	42,42
60	81.00	49.75	83.59	48.89					50~ 60	64.97	280.4	54.6,54.6
70	70.46	31.46	73.27	30.82					60~ 70	58.18	338.6	66,66
80	60.01	13.87	62.54	13.66					70~ 80	46.90	385.5	75.1,75.1
90	50.97	2.819	52.90	3.143					80~ 90	34.84	420.4	81.9,81.9
100	43.67	0.3994	45.15	0.3553					90~100	26.84	447.2	87.1,87.1
110	32.84	0.6316	33.53	0.5834					100~110	21.54	468.7	91.3,91.3
120	28.22	0.8633	30.71	0.7790					110~120	15.84	484.6	94.4,94.4
130	21.65	1.075	24.22	0.9977					120~130	12.20	496.8	96.8,96.8
140	15.94	1.223	17.98	1.152					130~140	8.152	504.9	98.4,98.4
150	10.34	1.397	12.86	1.339					140~150	4.857	509.8	99.3,99.3
160	5.417	1.700	7.980	1.609					150~160	2.495	512.3	99.8,99.8
170	1.798	1.983	1.616	1.905					160~170	0.8354	513.1	100,100
180	1.712	2.137	1.719	2.137					170~180	0.1760	513.3	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:COLORS  
Test Date:2019-07-01

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.750m [K=1.0000]  
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:24.00V I:0.4280A P:10.27W PF:1.000 Freq:0Hz Lamp Flux:513.293x1 lm		
NAME: NNS1224	TYPE:	WEIGHT:
SPEC.:NNS1224-8SW24CSS050CC0100	DIM.: 1000*12*24mm	SERIAL No.:
MFR.: Colors	SUR.:1000*12	Shielding Angle:



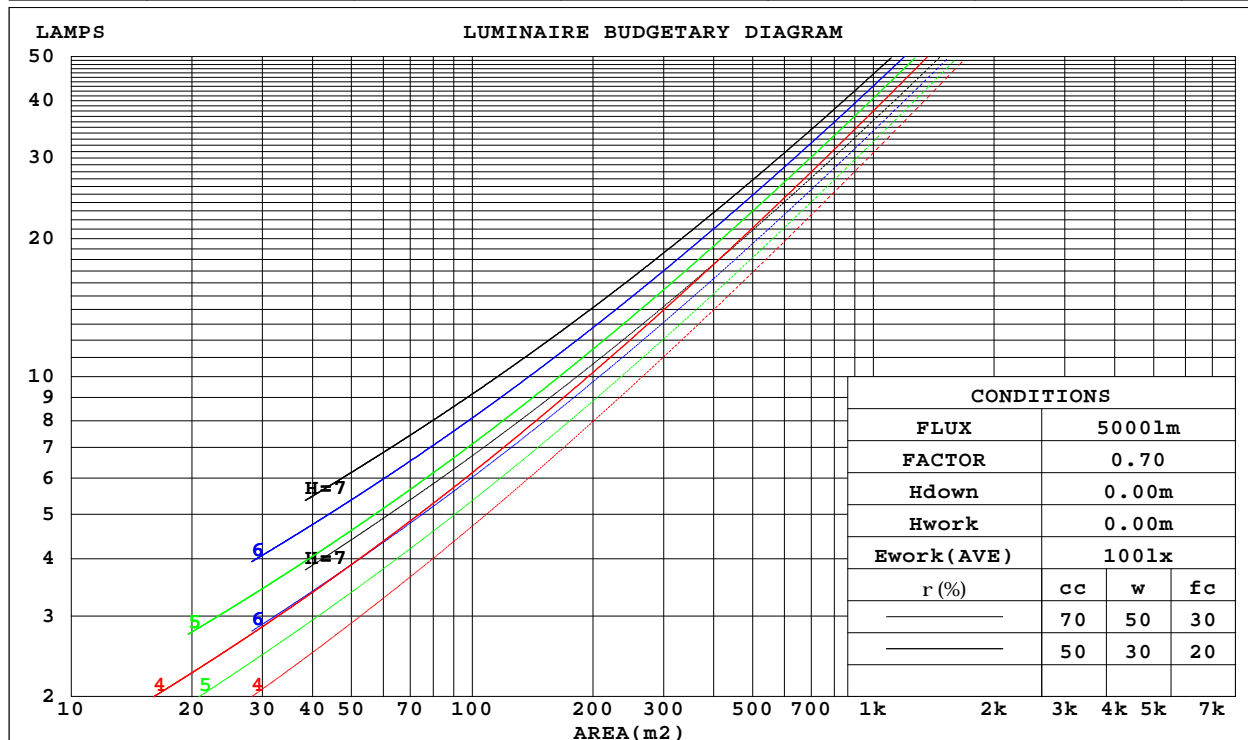
C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:COLORS  
Test Date:2019-07-01

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.750m [K=1.0000]  
Remarks:

## CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:24.00V I:0.4280A P:10.27W PF:1.000 Freq:0Hz Lamp Flux:513.293x1 lm		
NAME: NNS1224	TYPE:	WEIGHT:
SPEC.:NNS1224-8SW24CSS050CC0100	DIM.: 1000*12*24mm	SERIAL No.:
MFR.: Colors	SUR.:1000*12	Shielding Angle:

r <sub>cc</sub>	80%			70%			50%			30%			10%			0
r <sub>w</sub>	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
r <sub>fc</sub>	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio			Coefficients of Utilization(CU)												
0.0	1.15	1.15	1.15	1.10	1.10	1.10	1.01	1.01	1.01	.93	.93	.93	.85	.85	.85	.82
1.0	.96	.91	.86	.92	.87	.83	.84	.81	.77	.77	.74	.71	.71	.68	.66	.63
2.0	.82	.75	.68	.79	.72	.66	.72	.66	.61	.66	.61	.57	.61	.57	.53	.50
3.0	.71	.62	.55	.68	.60	.54	.63	.56	.50	.58	.52	.47	.53	.48	.44	.41
4.0	.63	.53	.46	.60	.52	.45	.55	.48	.42	.51	.45	.40	.47	.42	.37	.34
5.0	.56	.46	.39	.53	.45	.38	.49	.42	.36	.45	.39	.34	.42	.36	.32	.29
6.0	.50	.41	.34	.48	.39	.33	.44	.37	.31	.41	.34	.30	.38	.32	.28	.25
7.0	.45	.36	.30	.43	.35	.29	.40	.33	.27	.37	.31	.26	.34	.29	.25	.22
8.0	.41	.32	.26	.39	.31	.25	.37	.29	.24	.34	.28	.23	.31	.26	.22	.20
9.0	.37	.29	.23	.36	.28	.23	.33	.27	.22	.31	.25	.21	.29	.24	.20	.18
10.0	.34	.26	.21	.33	.26	.20	.31	.24	.20	.29	.23	.19	.27	.22	.18	.16



C Range: 0 - 360DEG  
 C Interval: 90.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:COLORS  
 Test Date:2019-07-01

g Range: 0 - 180DEG  
 g Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
 Humidity:65.0%  
 Test Distance:10.750m [K=1.0000]  
 Remarks:

## WEC AND CCEC

Test:U:24.00V I:0.4280A P:10.27W PF:1.000 Freq:0Hz Lamp Flux:513.293x1 lm		
NAME: NNS1224	TYPE:	WEIGHT:
SPEC.:NNS1224-8SW24CSS050CC0100	DIM.: 1000*12*24mm	SERIAL No.:
MFR.: Colors	SUR.:1000*12	Shielding Angle:

rcc	80%			70%			50%			30%			10%			0														
rw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0														
rfc	20%			20%			20%			20%			20%			0														
RCR	RCR:Room Cavity Ratio															Wall Exitance Coefficients(WEC)														
0.0																														
1.0	.376	.214	.068	.364	.207	.066	.340	.195	.062	.318	.183	.059	.298	.173	.056															
2.0	.328	.180	.055	.317	.175	.054	.295	.164	.051	.275	.155	.048	.257	.145	.046															
3.0	.293	.156	.047	.283	.151	.046	.263	.143	.043	.245	.134	.041	.228	.126	.039															
4.0	.264	.137	.040	.255	.133	.039	.237	.126	.038	.221	.119	.036	.206	.112	.034															
5.0	.241	.123	.036	.232	.119	.035	.216	.113	.033	.201	.106	.032	.187	.100	.030															
6.0	.221	.111	.032	.213	.108	.031	.198	.102	.030	.185	.096	.028	.172	.091	.027															
7.0	.204	.101	.029	.197	.098	.028	.183	.093	.027	.171	.088	.025	.159	.083	.024															
8.0	.189	.092	.026	.183	.090	.025	.170	.085	.024	.159	.080	.023	.148	.076	.022															
9.0	.176	.085	.024	.170	.083	.023	.159	.079	.022	.148	.074	.021	.138	.070	.020															
10.0	.165	.079	.022	.160	.077	.022	.149	.073	.021	.139	.069	.020	.130	.065	.019															

rcc	80%			70%			50%			30%			10%			0
rw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
rfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio			Ceiling Cavity Exitance Coefficients(CCEC)												
0.0	.328	.328	.328	.281	.281	.281	.192	.192	.192	.110	.110	.110	.035	.035	.035	
1.0	.324	.295	.268	.277	.253	.231	.190	.174	.160	.109	.101	.093	.035	.032	.030	
2.0	.317	.272	.234	.272	.234	.202	.186	.162	.141	.107	.094	.083	.034	.030	.027	
3.0	.310	.255	.212	.265	.220	.184	.182	.153	.129	.105	.089	.076	.034	.029	.025	
4.0	.302	.243	.197	.259	.210	.172	.178	.146	.121	.103	.086	.071	.033	.028	.023	
5.0	.294	.233	.188	.253	.201	.163	.174	.141	.115	.101	.083	.068	.033	.027	.023	
6.0	.287	.225	.180	.247	.195	.157	.170	.136	.111	.099	.080	.066	.032	.026	.022	
7.0	.280	.218	.175	.241	.189	.153	.166	.133	.108	.097	.078	.064	.031	.026	.021	
8.0	.273	.213	.171	.235	.185	.149	.163	.130	.106	.095	.076	.063	.031	.025	.021	
9.0	.267	.208	.168	.230	.181	.147	.159	.127	.104	.093	.075	.062	.030	.025	.021	
10.0	.261	.204	.166	.225	.177	.145	.156	.125	.103	.091	.074	.061	.030	.024	.020	

C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:COLORS  
Test Date:2019-07-01

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.750m [K=1.0000]  
Remarks:

## UGR(Unified Glare Rating) Table

Test:U:24.00V I:0.4280A P:10.27W PF:1.000 Freq:0Hz Lamp Flux:513.293x1 lm											
NAME: NNS1224					TYPE:			WEIGHT:			
SPEC.:NNS1224-8SW24CSS050CC0100					DIM.: 1000*12*24mm			SERIAL No.:			
MFR.: Colors					SUR.:1000*12			Shielding Angle:			
ceiling/cavity	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3	
walls	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3	
working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Room dimensions	Viewed crosswise					Viewed endwise					
x = 2H y = 2H	23.1	24.5	23.6	25.0	25.5	21.4	22.7	21.9	23.2	23.8	
	3H	25.7	27.0	26.2	27.5	28.1	23.0	24.2	23.5	24.8	25.4
	4H	27.2	28.4	27.7	28.9	29.5	23.6	24.8	24.2	25.4	26.0
	6H	28.8	29.9	29.4	30.5	31.1	24.1	25.2	24.7	25.8	26.4
	8H	29.7	30.8	30.3	31.4	32.0	24.3	25.4	24.9	25.9	26.6
	12H	30.8	31.8	31.4	32.4	33.1	24.4	25.4	25.0	26.0	26.7
4H	2H	23.6	24.8	24.2	25.4	26.0	22.4	23.6	22.9	24.1	24.7
	3H	26.4	27.5	27.0	28.1	28.8	24.2	25.2	24.8	25.8	26.5
	4H	28.0	29.0	28.7	29.6	30.3	25.0	26.0	25.7	26.6	27.3
	6H	29.9	30.7	30.5	31.4	32.1	25.7	26.6	26.4	27.2	28.0
	8H	30.9	31.7	31.6	32.4	33.1	26.0	26.8	26.6	27.4	28.2
	12H	32.1	32.9	32.8	33.5	34.3	26.2	26.9	26.9	27.6	28.4
8H	4H	28.3	29.1	29.0	29.8	30.6	25.9	26.7	26.5	27.3	28.1
	6H	30.4	31.1	31.1	31.8	32.6	26.9	27.6	27.6	28.3	29.1
	8H	31.6	32.2	32.3	32.9	33.8	27.3	28.0	28.1	28.7	29.5
	12H	33.1	33.6	33.8	34.4	35.2	27.8	28.3	28.5	29.0	29.9
12H	4H	28.3	29.1	29.0	29.8	30.5	26.1	26.9	26.8	27.5	28.3
	6H	30.5	31.1	31.2	31.8	32.6	27.3	27.9	28.0	28.6	29.5
	8H	31.8	32.3	32.5	33.1	33.9	27.9	28.5	28.7	29.2	30.0
Variations with the observer position at spacings:											
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.2					
1.5H	+ 0.2 / - 0.2					+ 0.2 / - 0.3					
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.5					

CIE Pub.117, 513.3 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -2.3)

C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:COLORS  
Test Date:2019-07-01

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.750m [K=1.0000]  
Remarks:

### UTILIZATION FACTORS TABLE

Test:U:24.00V I:0.4280A P:10.27W PF:1.000 Freq:0Hz Lamp Flux:513.293x1 lm		
NAME: NNS1224	TYPE:	WEIGHT:
SPEC.:NNS1224-8SW24CSS050CC0100	DIM.: 1000*12*24mm	SERIAL No.:
MFR.: Colors	SUR.:1000*12	Shielding Angle:

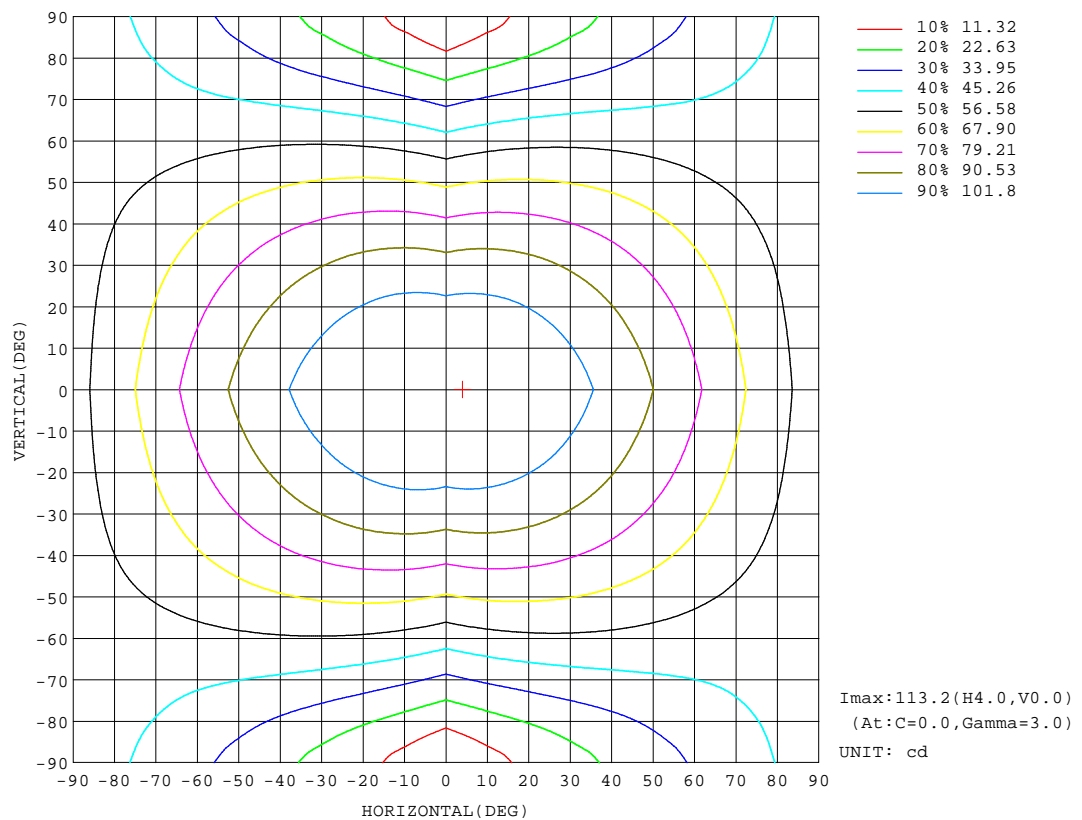
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	48	36	28	47	35	28	45	34	28	21
0.80	57	44	36	56	44	36	53	42	35	27
1.00	65	52	44	63	51	43	60	52	42	33
1.25	72	60	51	70	58	50	65	56	49	39
1.50	77	65	57	74	63	56	70	60	53	43
2.00	84	74	65	81	71	64	76	67	61	49
2.50	89	79	71	86	76	69	79	72	66	53
3.00	93	83	76	89	81	74	82	76	70	57
4.00	97	89	83	93	86	81	86	81	76	61
5.00	100	93	88	96	90	85	89	84	80	64
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG  
 C Interval: 90.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:COLORS  
 Test Date:2019-07-01

g Range: 0 - 180DEG  
 g Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
 Humidity:65.0%  
 Test Distance:10.750m [K=1.0000]  
 Remarks:

## ISOCANDELA DIAGRAM

Test:U:24.00V I:0.4280A P:10.27W PF:1.000 Freq:0Hz Lamp Flux:513.293x1 lm		
NAME: NNS1224	TYPE:	WEIGHT:
SPEC.:NNS1224-8SW24CSS050CC0100	DIM.: 1000*12*24mm	SERIAL No.:
MFR.: Colors	SUR.:1000*12	Shielding Angle:



C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:COLORS  
Test Date:2019-07-01

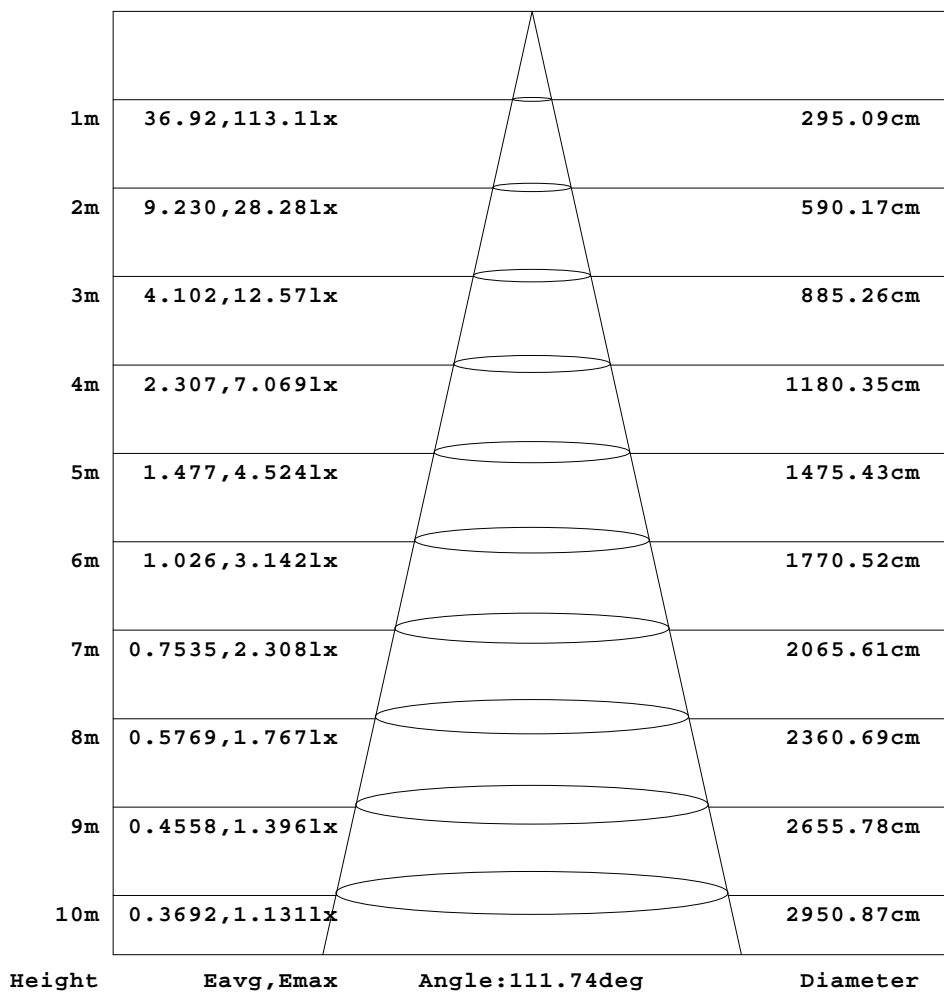
deg Range: 0 - 180DEG  
Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.750m [K=1.0000]  
Remarks:



### AAI Figure

Test:U:24.00V I:0.4280A P:10.27W PF:1.000 Freq:0Hz Lamp Flux:513.293x1 lm		
NAME: NNS1224	TYPE:	WEIGHT:
SPEC.:NNS1224-8SW24CSS050CC0100	DIM.: 1000*12*24mm	SERIAL No.:
MFR.: Colors	SUR.:1000*12	Shielding Angle:

Flux out:254.9 lm



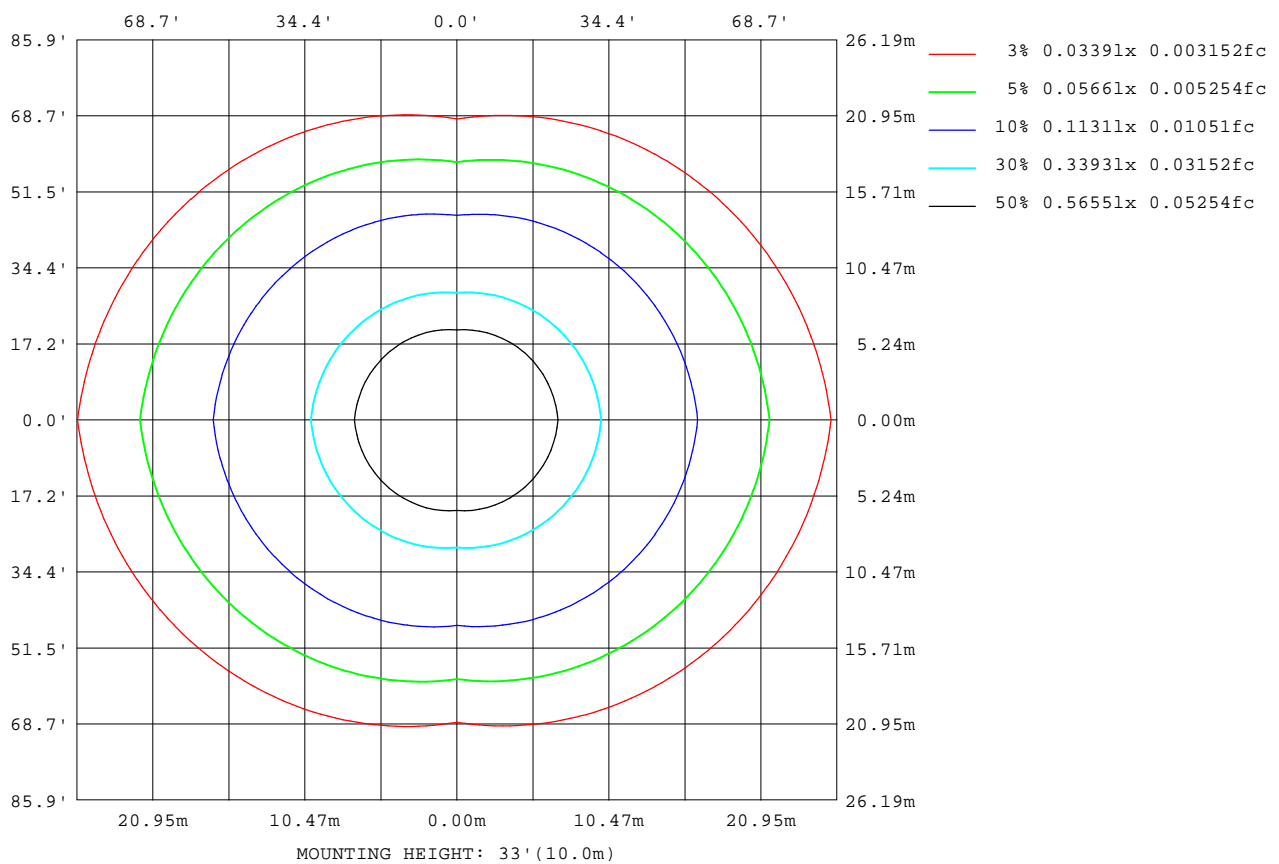
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: COLORS  
Test Date: 2019-07-01

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity: 65.0%  
Test Distance: 10.750m [K=1.0000]  
Remarks:

# ISOLUX DIAGRAM

Test:U:24.00V I:0.4280A P:10.27W PF:1.000 Freq:0Hz Lamp Flux:513.293x1 lm		
NAME: NNS1224	TYPE:	WEIGHT:
SPEC.:NNS1224-8SW24CSS050CC0100	DIM.: 1000*12*24mm	SERIAL No.:
MFR.: Colors	SUR.:1000*12	Shielding Angle:



C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:COLORS  
Test Date:2019-07-01

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.750m [K=1.0000]  
Remarks:

### LED Avg.L Report

Test:U:24.00V I:0.4280A P:10.27W PF:1.000 Freq:0Hz Lamp Flux:513.293x1 lm		
NAME: NNS1224	TYPE:	WEIGHT:
SPEC.:NNS1224-8SW24CSS050CC0100	DIM.: 1000*12*24mm	SERIAL No.:
MFR.: Colors	SUR.:1000*12	Shielding Angle:

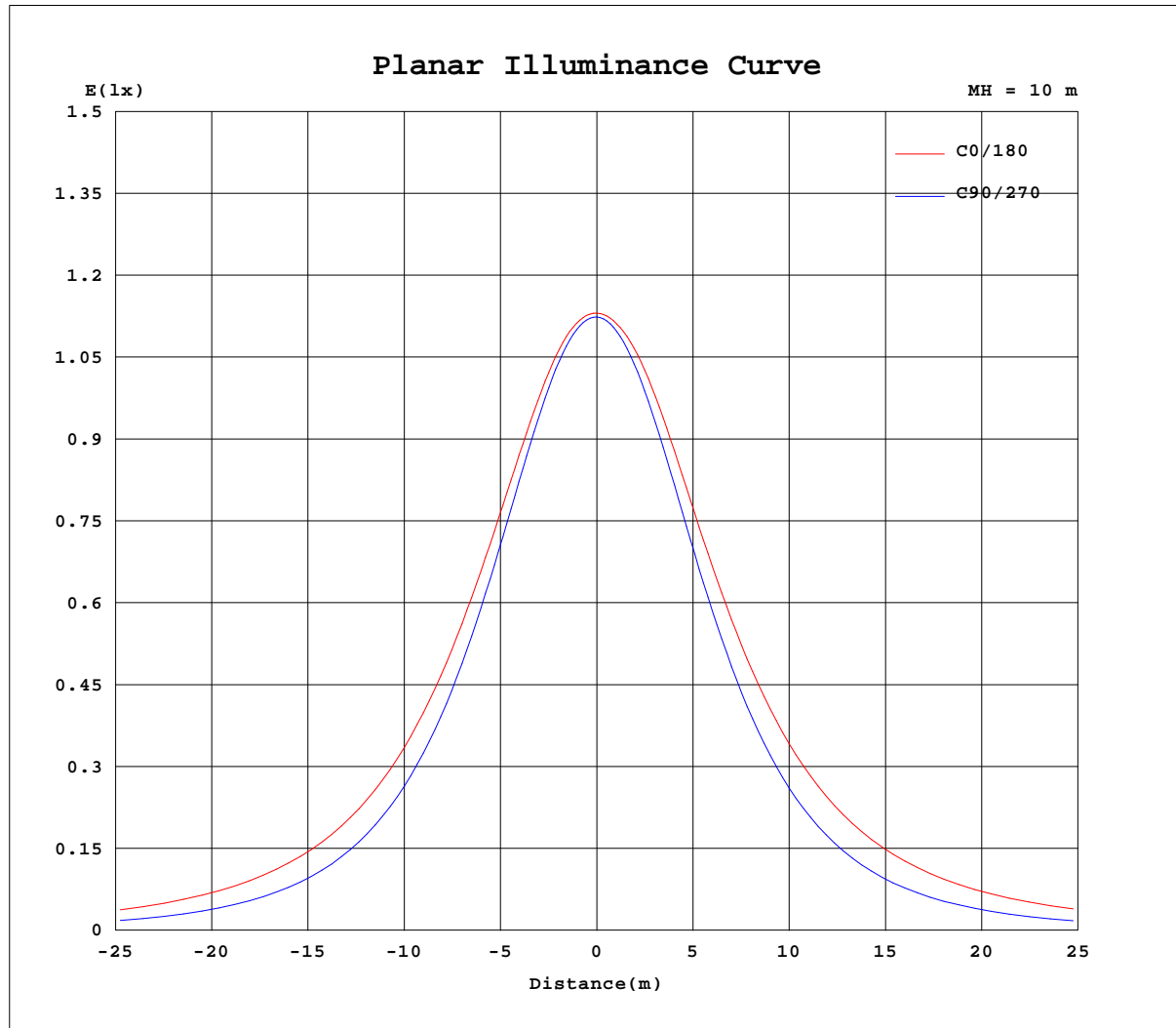
AvgL	cd/m2
L_0~180(65)av	15219
L_0~180(75)av	21417
L_0~180(85)av	53929
L_90~270(65)av	7946
L_90~270(75)av	7133
L_90~270(85)av	6813
L_45(65)av	10690
L_45(75)av	12517
L_45(85)av	24548

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:COLORS  
Test Date:2019-07-01

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.750m [K=1.0000]  
Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: COLORS  
Test Date: 2019-07-01

g Range: 0 - 180DEG  
g Interval: 1.0DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity: 65.0%  
Test Distance: 10.750m [K=1.0000]  
Remarks:

## LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:24.00V I:0.4280A P:10.27W PF:1.000 Freq:0Hz Lamp Flux:513.293x1 lm		
NAME: NNS1224	TYPE:	WEIGHT:
SPEC.:NNS1224-8SW24CSS050CC0100	DIM.: 1000*12*24mm	SERIAL No.:
MFR.: Colors	SUR.:1000*12	Shielding Angle:

Table--1

UNIT: cd

C(DEG) g (DEG)	0	90	180	270														
0	113	112	113	112														
5	113	112	113	112														
10	113	111	113	110														
15	112	108	112	108														
20	110	105	111	104														
25	108	100	109	99.5														
30	105	95.1	106	94.1														
35	102	89.0	104	88.0														
40	98.8	82.2	100	81.2														
45	94.9	74.8	96.8	73.9														
50	90.6	66.9	92.8	65.9														
55	85.9	58.5	88.3	57.6														
60	81.0	49.8	83.6	48.9														
65	75.8	40.7	78.5	39.9														
70	70.5	31.5	73.3	30.8														
75	65.2	22.4	67.9	21.9														
80	60.0	13.9	62.5	13.7														
85	55.3	7.04	57.5	7.21														
90	51.0	2.82	52.9	3.14														
95	47.1	0.37	48.8	0.34														
100	43.7	0.40	45.2	0.36														
105	40.4	0.50	41.9	0.46														
110	32.8	0.63	33.5	0.58														
115	30.1	0.75	32.4	0.70														
120	28.2	0.86	30.7	0.78														
125	24.9	0.97	27.6	0.88														
130	21.7	1.08	24.2	1.00														
135	18.7	1.15	20.9	1.09														
140	15.9	1.22	18.0	1.15														
145	12.4	1.32	15.3	1.22														
150	10.3	1.40	12.9	1.34														
155	7.82	1.55	10.5	1.49														
160	5.42	1.70	7.98	1.61														
165	2.70	1.85	3.47	1.76														
170	1.80	1.98	1.62	1.90														
175	1.70	2.09	1.62	2.01														
180	1.71	2.14	1.72	2.14														

C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:COLORS  
Test Date:2019-07-01

g Range: 0 - 180DEG  
Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:10.750m [K=1.0000]  
Remarks: